

EVERHOME MODIFIED SINE WAVE POWER INVERTER
DC 12V TO AC 120V 60HZ 1200 Watt
Installation Manual - Operating Instructions

Dear Customer, congratulations. Your new EVG-1200-12-120V-M Power Inverter is one of the most advanced and affordable DC to AC inverters available on the market today. This inverter, when used as described, will give you years of dependable service in your car, RV or boat. We have taken numerous measures in quality control and in our manufacturing process to ensure that your product arrives in top condition, and that it will perform to your satisfaction. In the rare event that your Power Inverter maybe damaged or has a missing item, does not perform as specified, or requires warranty service, please attend our Warranty format attached.

INTRODUCTION

To get the most of your EVG-1200-12-120V-M, proper installation is a critical issue. Please read the installation and operating instructions in this manual carefully before installing and using your inverter. Please pay special attention to the **CAUTION** statements in this manual. **CAUTION** statements identify conditions or practices which could result in damages to your inverter or to any other equipment.

INSTALLATION

The Battery power source must provide between 10 and 15-16 volts DC and must be able to supply sufficient current to operate the load and Inverter together. As a "rough guide line", you may divide the power consumption of the load (in watts) by 10 to obtain the current (in amperes) the DC power source must be able to deliver.

Example: Load is rated at 1200 watts maximum for this model. Power source must be able to deliver:

1200 divided by 10=120 amperes approximately.

CAUTION: The Inverter must be connected only to batteries (or battery arrangement series or parallel) with a nominal output voltage of 12 volts. The Inverter will not operate from a 6 volts nominal DC battery voltage and will be damaged if it is connected to a 24 volts nominal DC battery voltage system.

PLACEMENT OF THE INVERTER

For best operating results, the inverter should be placed on a flat surface, such as the floor or a seat of the vehicle. Approximately 30" of DC (positive "red" and negative "black") wires have been provided for this purpose.

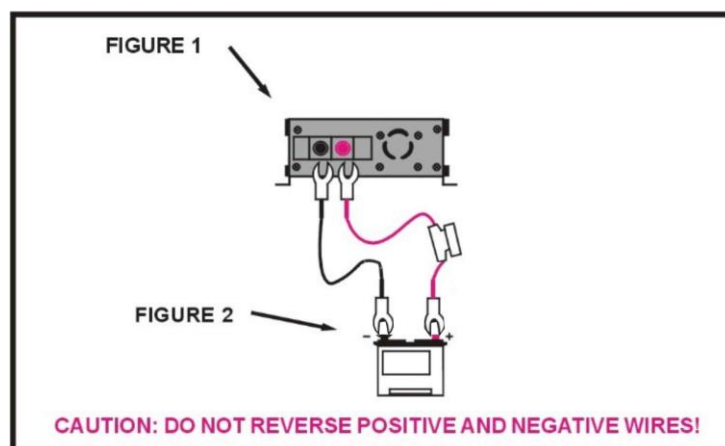
The inverter should only be used in locations that meet the following requirements:

- A.) **DRY:** Keep away from water. Do not allow water to drip or splash on the Inverter.
- B.) **COOL:** Ambient air temperature should be between 50 degrees and 80 degrees F. Do not place the inverter on or near a heating vent or any piece of equipment which is generating heat above room temperature. Do not place the inverter in direct sunlight if avoidable.
- C.) **VENTILATED:** Allow at least two inches of clearance around the Inverter for air flow. Do

not place anything on or over the inverter during operation. Make sure that air is allowed to circulate freely around the unit.

D.) **SAFE:** Do not use the Inverter near flammable materials or in any location which may accumulate flammable fumes or gases, such as the battery compartment of your car, truck, RV or boat.

E.) **CONNECTING TO THE POWER SOURCE:** Your Inverter comes equipped with wires for connection to the power source, use only one power connection at a time. One red wire is positive and the other one black is negative. (See Fig. 1 and Fig. 2).

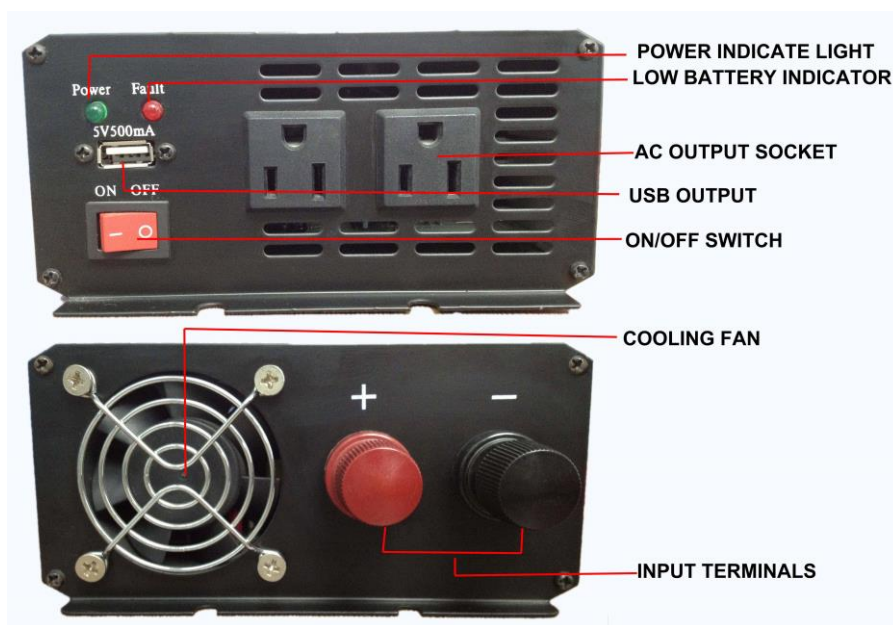


CAUTION: DOES NOT USE WITH POSITIVE GROUND ELECTRICAL SYSTEMS.

CAUTION: MAKE SURE THE INVERTER IS OFF WHEN CONNECTING THE WIRES.

- 1) Connect the inverter to the storage battery: turn the switch off before connecting to battery, and then correctly connect the inverter positive (red) terminal to positive battery post, and the negative (black) terminal to negative battery post. (Refer to fig. and fig.2)
- 2) Connect inverter to electrical appliance: plug the electrical appliance's plug into inverter's output socket, turn on the switch, and turn on the electrical appliance, now the AC equipment can be used as usual.

INDICATORS AND CONTROLS



PROTECTIONS

- 1) **Low battery voltage alarm and shutdown:** this condition is not harmful to the inverter, but will damage the power source. An audible alarm will be sounded when input voltage drops to 11 ± 0.5 volts. The inverter shuts down when input voltage drops to 10 ± 0.5 volts, it indicates the battery needs recharging. The user should stop operation at this time. If the low battery alarm sounds when the battery is fully charged, follow the steps for correcting the lack of output power in the *troubles shooting guide*.
- 2) **High input volt protection:** when battery voltage exceeds 15-16V, inverter will shut down automatically.
- 3) **Short circuit:** short circuit condition of the load will usually result in opening of the short circuit protection, when short circuit, the inverter will shut down, it won't damage to the inverter. If the short circuit fault is removed, the inverter will start to work automatically.
- 4) **Reverse Polarity:** when the inverter and the battery is reverse connected, the fuses will be burnt down, you need to replace the fuse, better to contact our professional services for replacement.
- 5) **High temperature:** when the temperature of the outer shell temperature reaches about 65°C , the solid-state temperature sensor located in the power inverter will automatically shut down the unit. Once it is cool, it will restart automatically.
- 6) **Overload:** the power inverter will limit current when the output power exceeds the max power, usually $\geq 1.2 \times$ rated power, keep easy, just remove the high max load, the power inverter will operate normally automatically.

BATTERY BANK CAPACITY CALCULATIONS

The battery's backup time depends on the battery's capacity (Ah) and your appliances' power (Watt).

The simplified and approximated method to calculate the operation time is:

$$\text{Battery Capacity (Ah)} \times \text{Input DC Nominal Voltage} \div \text{Load Power (W)}$$

Example:

Battery Capacity = 150Ah

Input Voltage = 12V

Loading Power = 600W

$$(150\text{Ah} \times 12\text{V}) / 600\text{W} = 3 \text{ Hours}$$

HOW TO SELECT THE POWER OF INVERTER

The power rating of an external appliance is indicated on the technical label which is affixed to the particular external appliance. External appliance, such as electronic motors, drills, saws, refrigerators and music systems usually have a bigger power rating is only given in Amps, simply multiply the factor output voltage to obtain the equivalent in Watt.

For example:

AC Current: 2 Amp

Output AC Voltage: 120 V

Output power: 2 Amp x 120V = 240 Watts

Suggest you to use: **300W or 500W model**

For high in-rush current loads like motors we advise you to use modified sine wave inverters with power output be more than 40-60% of the actual load. When you drive the special perceptual loads, please choose the power more than 7 times of the rated power, eg: 85L fridge if rated power is 100W, please choose $\geq 700W$ inverter.

TROUBLESHOOTING**1) AC appliances does not work, and the green power indicator does not light**

CAUSES	SOLUTION
Bad battery.	Check the battery, replace it if necessary.
Reverse connection of negative and positive poles.	Check the connection of battery, the inverter may be damaged. Replace the inverter (beyond our warranty).
Untighten connection of DC or AC wires.	Check the cables and the connection, screw tight the wiring terminal.

2) The electric appliance does not work, and the red FAULT indicator of the inverter is ON

CAUSES	SOLUTION
Overload shut off due to rated power of appliance exceeding the inverter's rated power.	Use the appliance which power below the inverter's rated power.
Overload shut off due to overhigh peak power despite of electric appliances lower than the inverter's rated power.	Since the peak power of the electric appliances exceeds the peak power of the inverter, use an appliance with a peak power consistent with the inverter.
The battery is over discharged (inverter gives alarm).	Replace the battery or use our inverter/charger to charge your battery.
Over temperature shut off due to bad ventilation.	Switch off the inverter and let it get cooled for 15 minutes. Clear objects around the fan and the inverter. Place the inverter at a cool place. Reduce load according to requirements. Restart.
Too large input current.	Check the working state of the charging system. Make sure the output voltage of the battery is within the proper voltage

3) The measured output Voltage of the inverter is too low

CAUSES	SOLUTION
The range of reading of common voltmeter is wrong.	Use a "True RMS voltmeter" to get the accurate data.
Too low battery DC Voltage.	Charging for the battery or change battery

4) The inverter gives out alarm sound

CAUSES	SOLUTION
Low DC voltage alarm.	Shorten the wire or use wider cable. Charge the battery. Change the Battery
Over temperature protection.	Make the inverter get cooler. Improve ventilation around the inverter. Place the inverter at a cool place.
AC appliances draw too much power.	Use a bigger power inverter or stop using it.
Poor connection.	Check the connection and tighten it

5) The inverter can only drive a lower-power load

CAUSES	SOLUTION
The current dissipation in DC cables	Shorten the wire, use wider wire.

6) The backup time of the battery shorter than expected

CAUSES	SOLUTION
The power consumption of appliances is larger than the rated load of the inverter	Use a battery with a larger capacity.
Bad or damaged battery.	Replace the battery.
The battery is not fully charged.	The charger can not fully charge the battery. Replace it with a better intelligent charger.
The current appliances draws too much when passing the wire	Shorten the wire, use wider wire.

TECHNICAL SPECIFICATIONS

MODEL		EVG-1200-12-120V-M
Output	Rated Power	1200W
	Surge Power	200%
	Frequency	60±2HZ
	AC Regulation	±10%
	AC Voltage	120V AC
	Waveform	Modified Sine Wave
Input	No Load Current Draw	<0.3A
	DC Voltage	12V DC
	Voltage Range	10 to 15-16V
	Efficiency	>85% without wiring loses.
	Fuse	4*40A
protection	Low Battery Alarm	11±0.5V
	Low Battery Shut Down	10.0±0.5V
	Over Load	≥120% or 125% of nominal power
		Automatically cut off, restart when load is under 1200W
	Over Voltage	15.5±0.5V
	Over Temperature	≥65°C
		Automatically cut off, restart when cool down
	Outpur Short Circuit	Automatically cut off, restart when output short circuit is removed
	Battery Polarity Reverse	By fuses open and replacement
Accessories		Input DC Cables, Spare Fuses, User Manual

The INVERTER is fitted with a USB port which can be used for electrical appliances with output voltage less than 5V DC and output current less than 500 mA. It is ideal for charging MP3 players, mobile phones etc. CAUTION: Do not use the USB port for electrical appliances with output voltage higher than 5V DC and output current higher than 500 mA.

WARRANTY FORMAT

Our Factory only sells products throughout distributor's channels and guarantees all products to the distributors by covering only the repair or replacement procedure of any damaged part of the unit, for the time-period expressed in the distributor's invoice. Factory provides standard warranty period of 1 year (Warranty period begins from the date on purchase invoice). Additional provision will be subject to contract. Additional warranty terms are available according to special sales contract.

We will honor our warranty to our distributors thru our RMA format.

The end user is subjected to the own distributor's warranty format. Please consult your provider about its warranty terms.

However, for all products, any warranty format for end users will never cover:

- Damages than can occur to external equipment or devices, as well as any compensation for dismissed lucre.
- Damages caused by external facts like: fire, water, generalized corrosion, biological infestations and by input voltages that create operating conditions beyond the maximum or minimum limits listed in the product specifications including high input voltage from generators and lightning strikes.
- Damages caused by transportation.
- Normal wear and tear of the product, and costs related to the removal, installation or troubleshooting of the customer's electrical systems.
- Damages caused by mistakes during installation procedures.
- When unit presents repairing intention by NOT AUTHORIZED personnel.
- When the explosion of any component of the surge suppression circuit causes any internal or external damage to the unit, in which case, the company considered the unit was operating correctly.
- When the original identification markings of the product (trade-mark, serial number) have been defaced, altered or removed.

All products featured in this user manual are easy to install. However, please make sure that licensed electricians verify the installation and follow all instructions indicated in the product user's manuals and/or any "special instructions" written in the standard packages of the products.

TECHNICAL INFORMATION DISCLAIMER

Any technical information displayed in the company's web page or in any written paper, catalog or user manual can be changed without previous notice.

The company makes not warranty as to the accuracy, sufficiency or suitability of any technical or other information provided in any product manual or other documentation not of its own. Furthermore, our company assumes no responsibility or liability for loss or damage, whether

direct, indirect, consequential or incidental, which might arise out of the use of such information. The use of any such information will be entirely at the user's or distributor's risk.

All products' catalogs can be downloaded from the company's web page. Some technical documents are also available to supplement the product information. Photos of some products would be slightly different of the final product you would receive.

FACTORY CONTACT

If you have any enquiries or technical problems concerning this inverter, please contact our customer services locally or to:

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Represented by: